

BENCHMARKS

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*BENCHMARKS was produced using MUSIC/SCRIPT

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TECHNICAL SUPPORT MANAGER TO LEAVE

Jerry Waldon, who has been instrumental in the development of the NTSU Computing Center since its inception, will pursue opportunities in private industry after this semester. We are grateful for the 18 years of leadership and technical know-how Jerry has afforded North Texas State. His expertise and good humor will be missed by all who have known and worked with him.

SAVE YOURSELF SOME GRIEF, TRY PRE-RESEARCH COUNSELING

Pre-research counseling, including survey instrument design (for ease in data analysis) is provided as a service by the Computing Center for those graduate students and faculty members who have a valid project number. A project number may be obtained through the Computing Center by completing the NTSU Computing Center Project Number Request Form, available at the Computing Center (ISB 119).

Frequently individuals who are unfamiliar with the requirements of computers with regard to the layout of their data, make things, unintentionally, very difficult for themselves at the time of data analysis. These problems can be alleviated a great deal, if not altogether, by consulting with a member of the Computing Center Staff before the administration of an instrument; the mailing out of a questionnaire; the transferring of data onto keypunch work sheets; etc. These people are familiar with the idiosyncrasies of computers, and can, in many cases, save the uninitiated and/or unsure computer user much time, trouble, and maybe even money.

Do yourself a favor, if you are going to collect data of any type which you plan to have analyzed using a computer and you are unfamiliar with and/or unsure of the best way to set up your data collection with regard to subsequent computer analysis, drop by the Computing Center. A quick consultation with a member of the staff, many times, can save a person hours of work and worry, and, as mentioned before, perhaps even money.

* * * * *

* OPERATIONS *

* * * * *

JOB CARD PREPARATION

The following is a reprint of the JOB CARD preparation schema from the North Texas State University Computing Center User's Reference for Technical Information Card (currently out of print). It is reproduced here as a reminder of the general rules of job card preparation and to stress the defaults for time, lines, and class parameters.

The JOB card appears as follows:

```
//jobname JOB (proj-numb,time,lines,cards),'name',CLASS=x
  where:
```

```
//           must appear in colums 1-2
```

```
jobname      must appear beginning in column 3 and
              can be from one to eight alphabetic
              or numeric characters the first of
              which must be alphabetic. No two jobs
              should have the same name. Prefix
              your initials to the jobname and/or
              add a number at the end to avoid
              duplicate names. Example: ABCRUN01
```

space(s) must follow job name

B must appear

space(s) must follow JOB

(left parenthesis must appear

proj-num appears as xxxx-yyyy and is the user's Computing Center project number.

,time optional. If specified, appears as ,mmm:ssss (or ,mmm or ,:ssss) and is CPU time in minutes and/or seconds (elapsed time for classes 1,2,3, or 4). Default is one minute. If time is left out and either of lines or cards is required, the comma preceding time must appear.

,lines optional. If specified, appears as ,xxxx and is lines in thousands. Default is 2 for 2000 lines. If lines is left out and cards appears, the comma before lines is required.

,cards optional. If specified, appears as ,xxxx and is number of cards to be punched. Default is 5000 for 5000 cards.

) right parenthesis must appear

, comma must appear

' single quote must appear

name must appear - maximum of 20 characters

' single quote must appear

,CLASS=x where x is chosen from the job class table. When class is A, this parameter may be omitted.

NOTE: If actual time, lines, or cards exceeds the default or number specified in the JOB card, the system will automatically terminate the job. Most jobs, however, can run quite easily using the default time, lines, and class; and many jobs can run under 1 minute which will, under most conditions, decrease turnaround time significantly.

Typical JOB cards are:

```
//ABCJOB01 JOB (xxxx-yyyy),'JOHN DOE'
//XYZ02 JOB (xxxx-yyyy,:40,1),'MARY DOE',CLASS=B
//WATRUN JOB (xxxx-yyyy,2,1),'NAME',CLASS=2
//PLCRUN JOB (xxxx-yyyy,1,1),'NAME',CLASS=1
//WATANS JOB (xxxx-yyyy,3,1),'NAME',CLASS=4
```

```
//SPITRUN JOB (xxxx-yyyy), 'NAME', CLASS=3
//STU05 JOB (xxxx-yyyy,3:45,1), 'NAME', CLASS=D
//LONGRUN JOB (xxxx-yyyy,15,5), 'NAME', CLASS=K
//LOTALIN JOB (xxxx-yyyy,,50), 'NAME', CLASS=J
```

JOB PROCESSING SCHEDULE

The following is the job processing schedule currently being used; however, this schedule is subject to change with later notification.

1. All jobs (with the exception of Administrative jobs with classes J, K, M, and N) are read into the Job Queue after being submitted. Priority for each job is calculated from the amount of time and lines in the Job Card as the jobs are being read onto the Job Queue. Thereafter, each job's priority will be increased by 1 for approximately every 30 minutes on queue, up to a top priority of 12. All jobs are processed in priority sequence, within job class, with the following considerations.
 - A. Each batch job class (1,2,3) (PLC, WATFIV, SPITBOL, and WATBOL) have their own initiator. Batch job turnaround should normally range between 5 and 20 minutes but should not exceed 60 minutes.
 - B. Eight class A jobs can process concurrently---Two class B jobs process concurrently---One class D, G, I, J, K, or N job can process concurrently---Four batch groups can process concurrently---Class C and M jobs process solo and require exclusive use of the CPU.
 - C. Jobs with $3*TIME+LINES/1000 > 45$ (classes J,K,M, and N) are considered overnight jobs and will be out the following day unless a slack period permits an earlier run. When the volume of overnight workload is more than can be processed, class J, K, M, and N jobs left on queue will be given first consideration during the next overnight run.
 - D. Midnight to 8:00 a.m. is primarily utilized for processing jobs with classes J, K, M, and N, specially scheduled jobs, student/faculty and administrative backlog (jobs already queued at midnight). Jobs read in after midnight will be run as processing time permits.
 - E. Currently, 512K is the maximum amount of memory that may be specified. Special provisions may be arranged through Tom Madron, Academic Systems Manager.

CHANGING DATASET NAMES WITH IEHPROGM

A new procedure has been placed in the procedure library for using the IBM utility program IEHPROGM. One principal use you may have for IEHPROGM is to rename datasets. In conjunction with the need to maintain a standard for naming disk datasets you may have occasion to rename a dataset. That may be accomplished as follows:

```
//MYJOB JOB (xxxx-yyyy)
// EXEC IEHPROGM
    RENAME DSNAME=OLD.DATASET.NAME,VOL=SYSDA=XXXXXX, <COL72>>C
        NEWNAME=new.dataset.name
```

If the datasets to be renamed reside on ACAD00, ACAD01, or ACAD02, the EXEC card need only be as illustrated. An utility control statement such as the RENAME statement must be contained in columns 1 to 71 on a card or card image. If, as in the example, there must be a continuation card, then a nonblank character must be placed in column 72 of the first card and the second card must begin in column sixteen. The example would rename "old.dataset.name" residing on volume xxxxxx to "new.dataset.name".

```
* * * * *
*           M U S I C           *
* * * * *
```

LEARNING TO USE MUSIC

The Computing Center has recently installed a MUSIC subsystem called the Interactive Instructional System (IIS). The IIS package contains, among other things, some instructional tools for learning MUSIC. If you already have a User ID for MUSIC you can use the IIS subsystem by signing on to your ID code and then following the instructions listed below. If you do not yet have a User ID for MUSIC, but would like to "learn" about MUSIC, you may still do so. This may be accomplished by finding a terminal and logging on to MUSIC. If the terminal is a dial-up you need to dial the MUSIC phone number (566-1222), if the terminal is hardwired you need to press the return key. Hardwired terminals may be either wired to the AS/5000 or the HP/2000. If there is no indication as to which computer the terminal is wired to, you can determine whether or not it is a MUSIC terminal yourself by the response of the computer when you press return. If the computer responds:

*NTSU MUSIC -- SIGN ON.

then it is, obviously, wired to MUSIC. If it does not respond, it is probably wired to the HP. To make sure of this, press the return key again, and then press the line feed key. If the system responds:

PLEASE LOG IN

then it is hardwired to the HP, and you will have to find another terminal. Once you are connected to MUSIC and you do not have a MUSIC ID, simply type the following command AFTER the system responds: *NTSU MUSIC -- SIGN ON.

/LA00

/ID LA00

then press return. From this point on the directions for using IIS to learn about MUSIC are the same for everyone:

1. Type LEARN. You will receive the following message:
ENTER STD#/CNAME OR LIST OR HELP
2. HELP explains something about IIS and how to interact with it.
3. LIST provides a list of currently available CAI packages.
4. STD# is a "student" number for IIS, and while you are using IIS to learn about MUSIC, use the word "STUDENT."
5. CNAME stands for Course Name and is the name of an appropriate CAI course. The courses currently listed are:
MUSIC (Introduction to MUSIC)
UPDATE (Introduction to MUSIC Line Editor)
EDITOR (Introduction to MUSIC Context Editor)
SCRIPT (Introduction to MUSIC/SCRIPT)
INTROS (Introduction to IIS)
SAS1 (Not Currently Available)
6. If, at any time, you wish to terminate a session, type:
SIGN OFF (Then press ENTER or CARRIAGE RETURN)*
This response will only be accepted when the system is waiting for your response to a question (not when in 'MORE. . .' mode).

*Note: The ENTER, RETURN, and CARRIAGE RETURN keys are synonymous.

GENERAL TERMINAL FEATURES

The following table is reproduced from the M.U.S.I.C. TOPICS handout distributed to all MUSIC ID holders. PLEASE NOTE that neither the tab key nor CTL-I on the MIME will work correctly. Therefore, it is best for MIME users to define, using PROFILE (enter PROFILE HELP, or consult the MUSIC at NTSU Manual pages 8 and 9 for more information), a primary character that is not normally in use to use as a tab, for example: @. -

GENERAL TERMINAL FEATURES

<u>Terminal Type</u>	<u>Maximum Line Length</u>	<u>Input Tab</u>	<u>Backspace</u>
TTY	72	None	_ (underline)
MIME	80	define	(or CTL-H)
LA36 (same for LA120)	133	CTL-I	Backspace (or CTL-H)
ACTV	80	CTL-I	Backspace (or CTL-H)
ADM3A	80	CTL-I	CTL-H
TI745	80	CTL-I	Backspace (or CTL-H)
TI735	80	CTL-I	Backspace (or CTL-H)
DIAB	132	CTL-I	Backspace (or CTL-H)

When CTL-H and CTL-I are indicated, you should hold down the CTL key while depressing the H or I key.

ELECTRONIC MAIL SYSTEM AVAILABLE

An electronic mail system has recently been installed and can be accessed through MUSIC. Entering: HELP MAIL will give a potential mail user information much like the following:

To build a mailbox simply type:

MAILBOX.BUILD

Both the sender and the receiver of mail must have a mailbox "built" before (s)he can receive or check receipt of mail.

This command creates two files in the user's save library:

1. code.MAILBOX (where "code" is the first four characters of the user's ID code; this is the "send" file).
2. @MAIL (this is the "receive" file).

To send mail type:

MAIL NOACK, CODE, LETTER

NOACK is optional. It turns off the feature that notifies the sender that his/her mail has been received and read.

CODE is the first four characters of the receiver's ID code. It is possible to have more than one receiver.

LETTER is the name of the file to be sent. An * may be entered for direct input of the message.

To read your mail type: READMAIL. Each letter will be described by the sender and the date/time. If you want to read the letter press the enter/return/carriage return key. If you want to throw the letter out type: JUNK. If you want to keep the letter, but not read it at the moment, type: KEEP.

CLASS ID'S TO BE DELETED

Please remember that all MUSIC class ID's will be deleted at the end of this semester, May 31. Students who think that they may need an ID past its expiration date should make arrangements with their instructors for an extension of the expiration date on their IDs; and the instructors, in turn, should consult with one of the MUSIC Coordinators, Abdi or Mohamad Salahshour, to extend any of the Class ID's assigned to them.

MUSIC NOTES

1. MUSIC/Script manuals are now available in the University Store in the textbook section (downstairs) for \$4.15.
2. If you enter the PROFILE command and any options on the same line, separated by commas; the options will be executed and you will be automatically returned to *GO mode.
3. Leaving off the sequence numbers of card image MUSIC files will save at least 25 percent of the space used to store the file.
4. It is a good idea to enter the keyword FILE frequently when you are editing a file. This command causes the temporary copy of the file you are editing to replace the "saved" file without terminating the edit session or changing the position of the line pointer. This command can only be issued in /EDIT (/TEDIT) mode, however, as /INPUT does not recognize

/EDIT (/TEDIT) commands. See the MUSIC at NTSU Manual, page 151.1, for further information about the FILE command.

TELEX CUSTOMER PHONE NUMBER

TELEX terminals are not covered under the master terminal maintenance contract which has been in effect since January, 1981. For this reason, all users of TELEX terminals should post the TELEX Customer Service phone number next to their terminals so that they may report any terminal problems directly to the TELEX Service Company. The toll free number is : 1 - 800 - 331 - 7410

ALTERNATIVE SPSS PROCEDURE

For the convenience of many users of SPSS we have provided an alternate procedure for its use called SPSSM. Through the use of SPSSM most jobs can be run without the use of much, if any, Job Control Language (JCL) beyond the JOB and EXEC cards. When using disk files it will no longer be necessary to prepare DD statements for most jobs. When using tapes it will be necessary to prepare only very shortened versions of the appropriate DD statements. The documentation for the procedure follows.

1. Defining the job

SPSSM jobs will, in general, appear as follows:

```
//MYJOB JOB (xxxx-yyyy)
// EXEC SPSSM,PARAMETERS
RUN NAME      SAMPLE SETUP
      other SPSS control cards
FINISH
```

2. Data Input PARAMETERS

All parameters are separated by commas, information enclosed by single quotes in the following examples must also be enclosed by single quotes on your EXEC card. EXEC cards may be continued on a second, third, or other cards by ensuring that the preceding card ends with a comma on or before column 72 and each succeeding card begins with two slashes and a blank column (columns 1-3: "// ").

DATAIN='dataset name'

Defines a raw data file on disk with the name 'dataset name'.

SPSSIN='dataset name'

Defines a SPSS system file on disk with the name 'dataset name'.

DICTION='dataset name'

Defines an OSIRIS dictionary file on disk with the name 'dataset name'. If SPSSM is being used to read an OSIRIS dataset, use the DATAIN parameter to define the OSIRIS data file and the DICTION parameter to define the OSIRIS dictionary file.

If your dataset(s) are on disk, but are not catalogued, then you must also tell the system something about the location of the data. This is done with the following parameters:

VOLIN=disk

Where "disk" is the name of the disk volume on which the dataset resides. For academic datasets those volumes are ACAD00, ACAD01, or ACAD02.

If the data reside on tape:

UNITIN=TAPE9

The procedure defaults to disk. This parameter, punched precisely as indicated, tells the system that the file is coming from tape (TAPE9).

Following the EXEC card you will also need the following DD statements:

For an OSIRIS dictionary:

//FT07F001 DD LABEL=n,VOL=SER=name

Where n=sequential file number of the file (which must precede the data file on the tape), and name=tape volume name. If your tape is not a standard label tape, call someone in Academic Computing (788-2324) for assistance.

For any raw data file:

//DISK DD LABEL=n,VOL=SER=name

Where "n" and "name" have the same meaning as above.

For a SPSS system file:

//FT03F001 DD LABEL=n,VOL=SER=name

3. Data Output Parameters

The list of parameters which follow allow the building of disk data sets without the need for DD statements. The resulting datasets will be catalogued. The parameters required are:

DATAOUT='dataset name'

Where the resulting dataset is a raw data file with the name 'dataset name'.

SPSSOUT='dataset name'

Where the output dataset is an SPSS system file with the name 'dataset name'

DISPOUT=CATLG

Where DISPOUT is the disposition of the output file. The default is

CATLG. If a dataset is being saved to tape, this parameter should be changed to KEEP.

VOLOUT=volume-name

Where "volume-name" is the name of the disk or tape volume on which the dataset is to be written.

UNITOUT=unit

"Unit" specifies a device. For disk datasets the default, SYSDA, should not be changed. For tape datasets set UNITOUT=TAPE9.

RECLen=n

RECLen defaults to n=80 and is the output record length. This is significant only for raw data output, not for SPSS system files.

BLOCK=n

BLOCK defaults to n=3520 and is the output blocksize. This must be an even multiple of the record length and is significant only for raw data output.

PRIM=n,SEC=n

The PRIMary and SECondary allocation of disk space must be greater than or equal to the total size of the dataset. This is significant only for disk files, not for tape files. The default in each case is one track. If you are uncertain about space allocations, consult someone in Academic Computing. Allocation is in tracks.

4. Other useful Parameters

MINUTES=n,SECONDS=n

This procedure defaults to one minute (and no seconds) of CPU time. If more time is needed, code these parameters with the appropriate amount of time.

CORE=nnnK

The default memory size is 234K. If more memory is required, code "nnnK" for the appropriate amount of memory.

SPACE=nnnnnnnn,

Where "SPACE" is the parameter referred to in the SPSS users manual, Appendix E, pp. 591-2. The value of SPACE modifies available amounts of workspace and transpace available to any statistical procedure, which, in turn, can be modified through the use of the SPSS ALLOCATE card (see pp. 111-113 of the SPSS manual). For most jobs the SPACE parameter need not be used. If, however, a job requires more workspace or transpace than the default amounts, then a different SPACE value may be necessary. The amount allocated for SPACE should be equal to the amount needed for TRANSPACE+WORKSPACE. The total amount of memory needed for the job should be approximately equal to the amount needed for SPSS itself plus the amount needed for SPACE. Thus, if SPACE is changed, then the CORE

parameter should probably also be changed: CORE=150K+SPACE. While the "K" designation can be used with the CORE parameter, space must be located in actual numbers of bytes of memory to be used (i.e. 150000, or 250000, etc.).

The use of this procedure will reduce the amount of time spent with JCL problems. The original SPSS procedure also remains available.

THE TYPE I, II, III, AND IV DILEMMA

Users of SAS procedures such as GLM, STEPWISE, and VARCOMP are frequently confounded by the TYPE I, II, III, and IV matrices that are output by these procedures. Some relief may be available via reference to A User's Guide to SAS 76, Appendix 9. Should you not have access to this manual, which is highly likely, since it is not the current manual, a copy of said appendix can be obtained, upon request, from Claudia Putnam at the Computing Center.

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* * * * *
*           H P - 2000           *
* * * * *

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THE BIG PURGE

Individual users should remember that the HP system, as reported in last month's BENCHMARKS, will be purged at the beginning of June of all programs and files not accessed since January 1, 1981. In order to keep programs and files from being purged, all individual users should access them in some way (i.e., get & list, run or execute them).

FACULTY USE OF BASIC TUTORIAL

Again, we would like to reiterate that Dr. Fred Davis of the ACIS Faculty has suggested that those faculty members using the BASIC Tutorial on the HP for their classes coordinate the scheduling of the assignment of the tutorial so that the system and equipment (terminals, decwriters, response time, etc.) would not be overloaded. This would aid everybody by assuring that assignments would be completed on schedule.

INDEX TO PAST ISSUES

In order to utilize BENCHMARKS to its fullest capacity and avoid redundancies, an index of previous issues containing information considered still pertinent to the NTSU Computing Center is included in each issue.

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* BENCHMARKS is a publication of the NTSU Computing Center.
* Reader/user feedback is encouraged, so send all letters,
* suggestions, etc., to: NTSU Computing Center
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*                        Denton, Tx 76203
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* Richard Harris . . . . . Director of
*                        Computer Systems
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*                        Computing Services
*
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BENCHMARKS is the Computing Center newsletter aimed at the NTSU academic community. A benchmark is a point of reference from which measurements of any sort are made, and that name was chosen to symbolize the intent of this publication - to provide a point of reference for the users of the North Texas State University computing facilities. BENCHMARKS was created to provide a channel of communications between the NTSU Computing Center and its users - a channel, hopefully, that will flow both ways, enabling both the users and the Computing Center staff to gain new insights into the ever changing world of academic computing.

WORKSHOP/SEMINAR CHECKLIST

The following checklist was compiled to help the Academic Computing staff get a feeling for the needs of the users of academic computing facilities in terms of workshop/learning experiences. Please check all areas in which you think workshops are needed, and feel free to add as many other items as you deem necessary.

1. MUSIC

- A. General overview _____
- B. Working with Files _____
- C. Accessing the OS operating system _____
- D. Using the editors _____
- E. MUSIC/Script _____
- F. IIS _____
- G. OTHER _____

2. HP/2000

- A. General overview _____
- B. Working with files _____
- C. OTHER _____

3. Statistical Packages

A. SPSS

- 1. General Overview _____
- 2. OTHER _____

B. SAS

- 1. General Overview _____
- 2. OTHER _____

C. OTHER Statistical Packages

1. Package _____

Presentation _____

2. Package _____
Presentation _____

3. Package _____
Presentation _____

4. JOB Control Language (JCL)

A. General overview _____

B. Specific Topic(s) _____

5. IBM Utilities

A. General Overview _____

B. Specific utilities/topic(s) _____

6. MISCELLANEOUS Topics (you list)

After completing the checklist, please return to:

Academic Computing Services
The Computing Center
NT Box 13495
North Texas State University
Denton, TX 76203